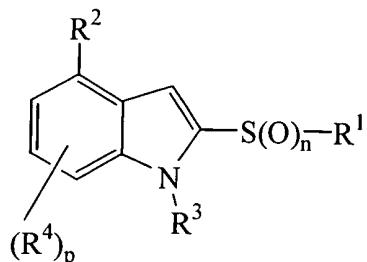


WHAT IS CLAIMED IS:

1           1.     A compound of the formula:



2           3     or a pharmaceutically acceptable salt thereof,  
4     wherein

5           n is 0, 1 or 2;

6           p is 1 or 2;

7            $R^1$  is aryl or heteroaryl;

8            $R^2$  is a heterocyclyl;

9            $R^3$  is hydrogen, alkyl, or  $-C(=O)-R^5$ , where  $R^5$  is alkyl, alkoxy, aryl, or aryloxy;  
10           and

11           each  $R^4$  is independently hydrogen, hydroxy, cyano, alkyl, alkoxy, thioalkyl,  
12           alkylthio, halo, haloalkyl, hydroxyalkyl, nitro, alkoxy carbonyl,  
13           alkyl carbonyl, alkylsulfonyl, arylsulfonyl, haloalkylsulfonyl, amino,  
14           alkyl amino, dialkyl amino, alkyl(aryl) amino, alkylaminocarbonyl,  
15           alkyl carbonyl amino, alkyl carbonyl(alkyl amino), alkylaminosulfonyl,  
16           alkylsulfonyl amino or methylenedioxy.

1           2.     The compound according to Claim 1, wherein p is 1 and  $R^4$  is located at  
2     the 6-position of the indole ring system.

1           3.     The compound according to Claim 1, wherein  $R^2$  is optionally substituted  
2     piperazin-1-yl or optionally substituted piperidin-4-yl.

1           4.     The compound according to Claim 3, wherein  $R^2$  is piperazin-1-yl, 4-  
2     methylpiperazin-1-yl, 3,5-dimethylpiperazin-1-yl, N-methyl piperidin-4-yl or piperidin-4-yl.

1                   5.     The compound according to Claim 4, wherein R<sup>2</sup> is 4-methylpiperazin-1-  
2     yl.

1                   6.     The compound according to Claim 3, wherein R<sup>1</sup> is optionally substituted  
2     phenyl or optionally substituted thienyl.

1                   7.     The compound according to Claim 6, wherein R<sup>1</sup> is thien-2-yl or phenyl  
2     which is optionally substituted with alkyl, halo, or haloalkyl.

1                   8.     The compound according to Claim 7, wherein R<sup>1</sup> is phenyl, 2,3-  
2     dichlorophenyl, 2-fluorophenyl, 2-methylphenyl, 2-trifluoromethylphenyl, 3-bromophenyl, or  
3     thien-2-yl.

1                   9.     The compound according to Claim 6, wherein n is 2.

1                   10.    The compound according to Claim 9, wherein R<sup>3</sup> is hydrogen, methyl or –  
2     C(=O)–R<sup>5</sup>, where R<sup>5</sup> is alkoxy.

1                   11.    The compound according to Claim 1, wherein R<sup>1</sup> is thienyl or phenyl  
2     which is optionally mono- or di-substituted independently with alkyl, halo, haloalkyl.

1                   12.    The compound according to Claim 11, wherein R<sup>1</sup> is phenyl, 2,3-  
2     dichlorophenyl, 2-fluorophenyl, 2-methylphenyl, 2-trifluoromethylphenyl, 3-bromophenyl, or  
3     thien-2-yl.

1                   13.    The compound according to Claim 11, wherein n is 2.

1                   14.    The compound according to Claim 13, wherein R<sup>2</sup> is optionally substituted  
2     piperazin-1-yl or optionally substituted piperidin-4-yl.

1                   15.    The compound according to Claim 14, wherein R<sup>2</sup> is piperazin-1-yl, 4-  
2     methylpiperazin-1-yl, 3,5-dimethylpiperazin-1-yl, N-methyl piperidin-4-yl or piperidin-4-yl.

1                   16.    The compound according to Claim 15, wherein R<sup>3</sup> is hydrogen, methyl or  
2     –C(=O)–R<sup>5</sup>, where R<sup>5</sup> is alkoxy.

1           17. The compound according to Claim 1, wherein n is 2.

1           18. The compound according to Claim 17, wherein R<sup>1</sup> is thienyl or phenyl

2 which is optionally mono- or di-substituted independently alkyl, halo, haloalkyl.

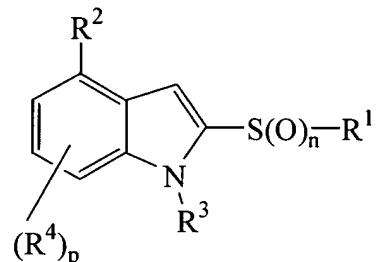
1           19. The compound according to Claim 18, wherein R<sup>2</sup> is optionally substituted

2 piperazin-1-yl or optionally substituted piperidin-4-yl.

1           20. The compound according to Claim 19, wherein R<sup>3</sup> is hydrogen, methyl or

2 -C(=O)-R<sup>5</sup>, where R<sup>5</sup> is alkoxy.

1           21. A method for producing a 2-substituted indole of the formula:



4           wherein

5           n is 0, 1, or 2;

6           p is 1 or 2;

7           R<sup>1</sup> is aryl or heteroaryl;

8           R<sup>2</sup> is a heterocycle optionally protected with a protecting group;

9           R<sup>3</sup> is hydrogen, alkyl, or -C(=O)-R<sup>5</sup>, where R<sup>5</sup> is alkyl, alkoxy, aryl, or aryloxy;

10           and

11           each R<sup>4</sup> is independently hydrogen, hydroxy, cyano, alkyl, alkoxy, thioalkyl,

12           alkylthio, halo, haloalkyl, hydroxyalkyl, nitro, alkoxy carbonyl,

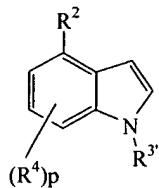
13           alkyl carbonyl, alkylsulfonyl, arylsulfonyl, haloalkylsulfonyl, amino,

14           alkylamino, dialkylamino, alkyl(aryl)amino, alkylaminocarbonyl,

15           alkylcarbonylamino, alkylcarbonyl(alkylamino), alkylaminosulfonyl,

16           alkylsulfonylamino or methylenedioxy;

17           said method comprising contacting a substituted indole of the formula:



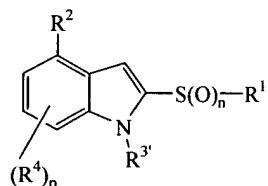
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19 wherein R<sup>3'</sup> is alkyl or -C(=O)-R<sup>5</sup>,

20 (i) with a base to produce a deprotonated indole; and

21 (ii) contacting the deprotonated indole with a sulfonylating agent of the formula:

22 Y-SO<sub>2</sub>-R<sup>1</sup>, where Y is halide, or a disulfide agent of the formula: R<sup>1</sup>-S-S-R<sup>1</sup> to produce 2-  
23 substituted indole of the formula:



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25 (iii) optionally oxidizing the sulfur with an oxidizing agent; and

26 (iv) optionally removing the protecting group to produce the 2-substituted indole.

1 22. The method of Claim 21, wherein Y is fluorine.

1 23. A composition comprising:

2 (a) a therapeutically effective amount of a compound of Claim 1; and

3 (b) a pharmaceutically acceptable carrier.

1 24. A method for treating a CNS disease state in a subject, said method  
2 comprising administering to said subject a therapeutically effective amount of a compound of  
3 Claim 1.

1 25. The method of Claim 24, wherein the disease state comprises psychoses,  
2 schizophrenia, manic depressions, neurological disorders, memory disorders, attention deficit  
3 disorder, Parkinson's disease, amyotrophic lateral sclerosis, Alzheimer's disease and  
4 Huntington's disease.

1 26. A method for treating a disorder of the gastrointestinal tract in a subject,  
2 said method comprising administering to said subject a therapeutically effective amount of a  
3 compound of Claim 1.

1                   27. A method for treating obesity in a subject, said method comprising  
2 administering to said subject a therapeutically effective amount of a compound of Claim 1.

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